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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,581	07/02/2003	Timothy P. McCaffrey	131818	5505

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EXAMINER

CASAREGOLA, LOUIS J

ART UNIT PAPER NUMBER

3746

DATE MAILED: 02/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/613,581		MCCAFFREY ET AL.	
	Examiner		Art Unit	
	Louis J. Casaregola		3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-6, 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Restriction Requirement

Restriction to one of the following inventions is required under 35 USC 121:

- I. Claims 1-6 drawn to a method of assembling a gas turbine engine classified in Class 60, subclass 772,
- II. Claims 7-12 drawn to a gas turbine fuel injector (subcombination) classified in Class 60, subclass 740, and
- III. Claims 13-20, drawn to a gas turbine combustion system (combination), classified in Class 60, subclass 722.

The inventions of Groups I-III above are distinct for the following reasons:

The apparatus of Group II and/or III could be assembled according to a method materially different than that of Group I. The claimed apparatus, for example, does not necessarily require a fuel injector to extend axially through a combustor dome as specified in the claimed method -- the injector could extend through the dome radially or at an acute angle.

The inventions of Groups II and III are also mutually distinct because the combustor combination of Group III does not require all pertinent details of the fuel injector subcombination of Group II. The Group III combination, for example, does not necessarily require a fuel nozzle tip oriented to discharge fuel along the engine's centerline axis as required by the Group II subcombination. Claim 13 is submitted as an evidence claim to support this point (MPEP 806.05(c)(III)). Furthermore, the Group II nozzle

subcombination has separate utility and could be used with alternative combustion systems which do not employ combustor dome, liner, and casing elements arranged and supported in the manner specified in the Group III combination.

Because these inventions are distinct for the reasons given above and require separate classification and/or divergent fields of search, restriction for examination purposes as indicated is proper.

On 2/14/05, applicants' attorney, Mr. Robert Reeser, elected via telephone and with traverse, the invention of Group II, claims 7-12. An action on the merits of the elected claims is set forth below, and non-elected claims 1-6 and 13-20 are withdrawn from further consideration.

Claim Rejections - 35 USC § 112

Claims 7-12 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Claim 7 and related dependent claims 8-12 describe a injection tip as being "for discharging fuel into said combustor in a direction that is substantially parallel to the gas turbine engine centerline axis" (claim 7, lines 4-5). The cited passage is an intended use clause. Intended use clauses are permitted under § 112 to the extent that they are

accurate, but that does not appear to be the case in this instance. As shown in Figure 2, fuel injector 64 has a tip aimed in the direction of combustor axis 160. Axis 160 however appears to be oriented at a significant angle relative to the engine centerline axis, hence, an injector tip aimed along axis 160 cannot be accurately described as discharging along the engine's centerline axis.

The claims also describe an air outlet as being "for discharging cooling air external to the engine" (claim 7, lines 8-9). This passage constitutes a further instance of an intended use clause which is inaccurate. The claimed air outlet corresponds to outlet 82 shown in Figure 3. This outlet discharges into engine bay 86 shown in Figure 2 (see page 5, lines 27-29). Engine bay 86, however, appears to be an internal engine compartment, hence, the air outlet does not discharge cooling air external to engine as claimed.

Claim Rejections - 35 USC § 103

Claims 7 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lavie et al in view of Sakurai et al.

Lavie discloses a gas turbine fuel nozzle having structural features similar to those of the claimed nozzle. As shown in Figure 2, Lavie's nozzle includes an injector tip 152, a fuel inlet at the upper end of fuel supply passage 170, a coolant inlet at the upper end of supply duct 202, and a coolant outlet at the upper end of return duct 204.

Art Unit: 3746


Lavie's specification states that his coolant may be "oil, water, fuel, or any other suitable fluid" (see paragraph 0016). Other prior art fuel nozzles use air for coolant as disclosed, for example, by Sakurai; see cooling jacket 6 in Figure 1, and column 2, lines 62-63.

Since air is thus a known coolant for fuel nozzles, it would have been an obvious choice for an "other suitable fluid" as contemplated by Lavie. Note also that as stated above, claim language relating to fuel discharge along the engine centerline axis and air coolant discharge exterior to the engine constitutes intended use. The claimed nozzle includes nothing that would make it any more suitable than the prior art nozzle for use in discharging fuel and air in this manner.

Additional References

Kuypers et al is cited as disclosing a further example of a prior art fuel nozzle with a cooling system.

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571-272-4826 (M-F; 7:30-4:00)
703-872-9306 FAX
February 15, 2005



LOUIS J. CASAREGOLA
PRIMARY EXAMINER

Art Unit: 3746

If repeated attempts to reach the examiner by telephone are unsuccessful, the art unit supervisor, Cheryl Tyler, can be reached at 571-272-4834.

Information regarding the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR, and status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).